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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/042,549

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Christopher A. Michaluk

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07/14/2005

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EXAMINER

ZHENG, LOIS L

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,549

Applicant(s)

MICHALUK, CHRISTOPHER A.

Examiner

Lois Zheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-35 and 37-94 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-35 and 37-94 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Status

1. Claims 2-6 and 37-41 are amended in view of the amendment filed on 22 April 2005. Claims 2-35 and 37-94 remain under examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made:

3. Claims 2-4, 16-17, 71-73 and 89-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. "Influence of Transverse Rolling on the Microstructural and Textural Development of Pure Tantalum", Metallurgical Transactions A, Volume 23A, August 1992, pages 2183-2191(Clark) in view of International Application Publication WO 87/07650(WO '650).

The teachings of Clark and WO '650 are discussed in the previous Non-Final Office Action. The rejection ground is maintained for the same reason as stated in paragraph 5 of the previous Non-Final Office Action.

4. Claims 18-35, 74-79 and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of WO '650, further in view of Friedman et al. US 5,482,672(Friedman).

The teachings of Clark, WO'650 and Friedman are discussed in paragraph 6 of the previous Non-Final Office Action. The rejection ground is maintained for the same reason as stated in paragraph 6 of the previous Non-Final Office Action.

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of WO '650, further in view of Rerat US 4,149,876(Rerat).

The teachings of Clark, WO'650 and Rerat are discussed in paragraph 7 of the previous Non-Final Office Action. The rejection ground is maintained for the same reason as stated in paragraph 7 of the previous Non-Final Office Action.

6. Claims 37-49, 51-70, 80-88 and 92-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of Friedman, further in view of Japanese Patent 362104180A(JP '180).

The teachings of Clark, Friedman and JP'180 are discussed in paragraph 8 of the previous Non-Final Office Action. The rejection ground is maintained for the same reason as stated in paragraph 8 of the previous Non-Final Office Action.

7. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark in view of Friedman, further in view of Rerat, further in view of Japanese Patent 362104180A(JP '180).

The teachings of Clark, Friedman, Rerat and JP'180 are discussed in paragraph 9 of the previous Non-Final Office Action. The rejection ground is maintained for the same reason as stated in paragraph 9 of the previous Non-Final Office Action.

Note, the examiner is construing annealing as a thermal process, not a thermalmechanical process.

Response to Arguments

8. Applicant's arguments with respect to claims 2-35 and 37-94 have been considered but are not persuasive.

1. With respect to applicant's remarks that Clark reference does not teach the properties of an extruded tantalum billet before any subsequent processing and the Clark reference teaches additional rolling and cross-rolling step, the examiner does not find the argument persuasive since the instant claims are product by process claims. The extrusion as claimed recites a process limitation. It is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, the burden falls upon the applicant to show that any process steps associated therewith results in a product materially different from that disclosed in the prior art. See *In re Thorpe*, (227 USPQ 964), *In re Brown*, (173 USPQ 685), *In re Fessman*, (180 USPQ 524) and MPEP 2113. In this case, the burden falls upon the applicant to provide factual evidence indicating that the extruded tantalum billet produced by the claimed invention is materially different from the extruded tantalum billet produced by Clark in view of WO'650.

With respect to applicant's argument that Clark does not teach the claimed substantially uniform grain size, the examiner does not find the arguments persuasive since the meaning of substantially uniform grain size is not clearly defined in the specification. Due to the lack of clear definition for "substantially uniform grain size" in the instant invention and the absence of negative teaching of largely varying grain size in the Clark reference, the examiner reasonably conclude that Clark in view of WO'650

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teaches a tantalum billet having substantially uniform grain size based on the broadest interpretation.

In the remarks, applicant further argues that there is no motivation to combine the teachings of Clark and WO'650 because Clark's tantalum billet does not require the claimed high purity of at least about 99.99% and the WO'650 reference teaches forming a high purity sputtering target which is different from the intended use of the high purity tantalum billet as taught by Clark. The examiner does not find these arguments persuasive since both Clark and WO'650 teach working with high purity tantalum metal. Even though commercial grade high purity tantalum might be satisfactory for the process of Clark, any tantalum purity that is even higher than the commercial grade high purity tantalum could also be practiced by the process of Clark with expected success, especially when production cost is not an issue. In addition, a high purity tantalum billet can be used as a sputtering target since a high purity tantalum billet and a high purity tantalum sputtering targets are both blocks of high purity tantalum metal. Therefore, it would have been obvious to one of ordinary skill in the art to have utilized the high purity tantalum billet of Clark to form a tantalum sputtering target with high quality insulating film and metallic Ta electrode film as taught by WO'650.

With respect to applicant's argument that Friedman only teaches processing of a powdered tantalum or niobium and does not teach a solid ingot derived billet, the examiner does not find the argument persuasive because Friedman teaches tantalum or niobium bar formed by extrusion (See paragraph 5 of the previous Final Office Action dated 17 November 2003). Even though the extruded tantalum or niobium is originally

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formed from pressing metal powders, it would have been obvious to one of ordinary skill in the art to have applied the same extrusion to an ingot derived tantalum or niobium with expected success since Friedman teaches that tantalum ingots are viable alternative to pressed tantalum articles from metal powder(col. 1 lines 41-44)

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LLZ

ROY KING 
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700